ENTOMOLOGY.[1]

INSECTS AND DROUTH.--The year 1880 is known to have been phenomenal in the excessive drouth which prevailed in spring and early summer in the New England States. In a yet unpublished account of the disastrous work of the Army-worm that year (contrary to the old theory that it can abound only in a wet summer) in Monmouth county, New Jersey, Rev. Samuel Lockwood, of Freehold, speaks as follows of the exceptional abundance of other species:

"As for that Colorado pest, it was out early and in vast numbers, and by June 1st the Striped beetle (*Lytta vittata* Fabr.) fell upon the potatoes in hordes so vast that some farmers, because of the activity and numbers of the insect, declared it more formidable than the Colorado scourge. And that queer beetle, *Macranoxia variolosa* Hentz, so rare that I had never yet heard of one in Monmouth county, appeared in the first week of June at Red Bank, in quantity. In the same week our clouded yellow butterfly (*Colias philodice* Godart) made a premature appearance in immense swarms. Another sight which affected me because of its novelty, was the occurrence in great numbers, in the openings of "The Pines," in the second week of May, of a low flying brown butterfly like a Hipparchia. Tempting as the scene was, I was too ill that day to get out of my carriage for a butterfly hunt. But enough has been stated to show that from every point 1880 was, for New Jersey, a phenomenal year."

PROBABLE SOUND ORGANS IN SPHINGID PUPÆ.—In recently characterizing the pupa of *Sphinx catalpæ* Boisd., for our report as entomologist to the Department of Agriculture, we were struck with the occurrence on the anterior border of each of the larger, movable, abdominal joints (viz: abdominal joints 5, 6 and 7) of a peculiar, elongate concavity, a structure not mentioned by Westwood, Burmeister, Kirby, Spence, Girard, Clemens, Harris, Graber or any modern author whom we have been able to consult. There is an approach to it in the pupa of *Ceratomia amyntor*, and it occurs in that of *Sphinx harrisii*, in similar position and form as in *catalpæ*. In *Macrosila 5-maculata* it is somewhat above the spiracles, and that on the fifth abdominal joint has a second larger ridge running around it posteriorly. It does not occur in any of the species of the genera Sesia, Thyreus, Darapsa, Deilephila, Philampelus and Smerinthus in our collection. It has no internal connection with the respiratory or circulatory systems and its function is probably sound-producing by friction with the posterior margin of the preceding joint.

This organ may in fact throw some light on the method by which the noise is produced which the pupa of *Sphinx atropos* is

[1] This department is edited by Professor C. V. RILEY, Washington, D. C., to whom communications, books for notice, etc., should be sent.

known to be capable of. Unfortunately we have no pupæ of that species for examination. We shall be glad to learn from any of our lepidopterological readers if they are familiar with this structure in any other pupæ, or know of any record of it.—*C. V. Riley.*

CLOVER INSECTS.—In his paper upon the insects of the clover plant, read before the N. Y. State Agr. Society, Jan. 19, 1881, Professor J. A. Lintner enumerates but three species of Coleoptera as being destructive to the plant.

From personal observation I am now able to more than double the number, the revised list being as follows:

Hylastes trifolii Muller (larva in roots).
Languria mozardi Fabr. (larva in stem).
Graphorrhinus vadosus Say (imago on leaves).
Lachnosterna serricornis Lec. (imago on blossoms).
Macrobasis unicolor Kirby (imago on leaves).
Colaspis brunnea Fab. (imago on leaves).
Epicærus imbricatus Say (imago on blossoms).

The latter four species are my contribution to the list, all old offenders, and well known to the economic entomologist.

None of these have so far become to any extent destructive, the Colaspis approaching nearest thereto. But as yet clover culture is in its infancy in the West, hence if the acreage were largely multiplied, the results can now be only a matter of supposition.—*F. M. Webster.*

IS CYRTONEURA A PARASITE OR SCAVENGER?—Last spring we sent specimens of a Muscid for determination to Mr. R. H. Meade, Bradford, England, and he kindly wrote us as follows regarding this species which was bred from chrysalides of the Cotton-worm:

"The Dipterous insects which I received yesterday are one male and two females of *Cyrtoneura stabulans* Fallen. This fly is common throughout Europe, and also occurs in North America, according to Loew and Walker (see Osten Sacken's Cat. of Dipt. of N. A., edit. 2d, p. 163). The larvæ usually feed upon decaying vegetable substances, as fungi, etc., but Schiner (Fauna Austriaca, Dipt., Vol. 1, p. 597) says, according to Bremi and Hartig, they also live upon the larvæ of Lepidoptera and bees. It is a very interesting fact that they also eat the Cotton-worms. Your American specimens seem to be perfectly identical with my British ones, but are rather smaller. I may add that the genus Cyrtoneura Macq. belongs to the family of the true Muscidæ."[1]

There can be no doubt that the Cyrtoneuras we bred issued from pupæ of Aletia, but as the usual habits of the species are those of a scavenger, some doubt has arisen in our mind as to

[1] Vide also Mr. Meade's note on the same subject in the (London) *Entomologist*, June, 1882, pp. 140–141.

whether it is a true parasite. We recall to our readers another Dipterous insect, the *Phora aletiæ* Comstock, which has been called, by its describer, one of the most important parasites of the Cotton-worm, and which nevertheless turns out to be a mere scavenger. *Cyrtoneura stabulans* may, like this Phora, lay her eggs on the decaying pupæ of Aletia, which are so commonly met with at the time the worms have defoliated the fields and have also eaten the leaves which sheltered the chrysalides. These chrysalides when exposed to the light and heat of the sun are very liable to rot, and on examining the chrysalides hanging on the defoliated plants, by far the larger portion of them will be found to be rotten, many containing the larvæ of Phora, some the larva of this Cyrtoneura, while the largest portion contain only a badly smelling fluid. If further observations prove that this fly infests only such chrysalides and cannot be bred from the living Aletia larva, it cannot be considered a true parasite.—*C. V. Riley.*

HABITS OF POLYCAON CONFERTUS Lec.—There seems to be nothing recorded on the habits of the genus Polycaon beyond a short notice in Dr. Horn's Revision of the N. A. species of Bostrichidæ,[1] that *P. confertus* "occurs in California where it is said to depredate on grape vine." We lately received from Mr. Matthew Cooke, of Sacramento, Cal., some pear twigs in which the above-named beetle was boring in exactly the same manner as our common Apple-twig borer, *Amphicerus bicaudatus*. Mr. Cooke says that the Polycaon is quite injurious to apple and pear trees and also to the grape vine. Thus, from what we know of its natural history, we may safely infer that its habits do not differ essentially from those of *Amphicerus bicaudatus*, *i. e.*, the beetle bores for feeding purposes in living twigs of fruit trees and grape vines, never, however, ovipositing in such twigs, and both male and female being concerned in this destructive work. Both species live, in all probability, as larvæ in the dead and dry wood of forest trees.

DINODERUS PUSILLUS AS A MUSEUM PEST.—While speaking of the habits of Bostrichid beetles, we would mention that last year we made the acquaintance of the above-named species in the role of a museum pest, it being usually met with in various drugs and other stored and dry vegetable products. The beetles suddenly appeared in large numbers in one of our insect boxes which had not been used for many years, perforating the paper lining and evidently feeding on the cork with which the box was lined. How the beetles came in the box remains a mystery to us, for the box was made and lined nineteen years ago and the insect had not appeared previously.—*C. V. R.*

MYRMECOPHILOUS COLEOPTERA.—In connection with our remarks on *Coscinoptera americana* in the last number of the NAT-

[1] Proc. Am. Philos. Soc., Vol. XVII, p. 554.

URALIST, we would mention that while several species of the genus Cetonia (*C. ænea* and *C. aurata*) are known in Europe to live in the larva state among ants, and while it is also known that the species of Cremastochilus are true myrmecophilous insects, yet nothing has been recorded of the earlier stages of Euphoria, though some species are among our most common beetles. Mr. Laurence Bruner now communicates to us from West Point, Nebr., that he finds *Euphoria hirtipes* Horn—larvæ as well as beetles—quite commonly in the hills of the common red ant (which in all probability does not differ from the European *Formica rufa* Linn.). There is scarcely any doubt that other species of Euphoria will have the same habits. The only other myrmecophilous Scarabæid known from the U. S. is *Euparia castanea*, which is very commonly met with in the Southern States in the nests of *Solenopsis xyloni* McCook, the so-called stinging ant of the cotton fields.

Mr. Theo. Pergande made an interesting observation the past spring on *Hymenorus rufipes*. He found its pupæ in the hill of a large, black, sericeous ant (*Formica fusca* Linn.), and the pupæ of another species of Hymenorus, *H. obscurus* Say, in the nest of a large yellow ant under a stone, but which cannot be named at present. The great care and attention bestowed by the ants upon the pupæ of the beetles when the nests were disturbed, seem to show that the pupæ were not in the nests of the ants by accident. Further observations are necessary to establish the fact, but as myrmecophilous Tenebrionidæ are known, and as an undescribed species of Anthicus is undoubtedly an inquiline of the red ant in Colorado, we should not be surprised if these species of Hymenorus would prove to be myrmecophilous in their earlier states.

Mr. E. A. Schwarz, who has collected largely in ants' nests, and who has many unpublished facts, will, we hope, ere long give us a list of all N. A. Coleoptera known to live among ants. —*C. V. Riley.*

DISCONTINUANCE OF PUBLICATION.—We are advised by the publisher of the *Revue Coleopterologique* of the discontinuance of this periodical. When we noticed in these columns (p. 152) the appearance of the *Revue*, we hoped that it would cover the whole subject of coleopterology, thus furnishing to the specialist, at short intervals, that information which the *Zoological Record* and the *Zoologischer Jahresbericht* give only in very condensed form at long intervals. However, the magazine greatly disappointed us as it was evident that the managers were too much absorbed in lists of "new species," synonyms and the other dry bones of the science to create any general interest in its pages. The result just announced was, it seems to us, but natural.